


1

Please contact undersigned with any questions or comments.

Respectfully submitted,



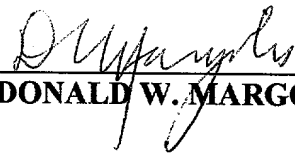
Donald W. Margolis, Reg. No. 22,045  
3405 Penrose Place, Suite 105  
Boulder Co 80301  
303-443-6200

Enclosures  
DWM:gy

**EXPRESS MAIL CERTIFICATE**

**Label No. EL555938127US**

I hereby certify that this correspondence and fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope with the proper postage attached on the date indicated below and addressed to: Box New Reissue Patent Application, Assistant Commissioner of Patent & Trademarks, Washington, DC 20231.



**DONALD W. MARGOLIS, Reg. No. 22,045**

**September 8, 2000**  
**Date**

0065938127US

## REISSUE PATENT APPLICATION TRANSMITTAL

## Address to:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

Attorney Docket No.

P4380

First Named Inventor

Ronald G Haagenstad

Original Patent Number

5,802,748

Original Patent Issue Date  
(Month/Day/Year)

September 8, 1998

Express Mail Label No.

EL555938127VS

## APPLICATION FOR REISSUE OF:

(Check applicable box)



Utility Patent



Design Patent



Plant Patent

## APPLICATION ELEMENTS



\*Fee Transmittal Form (PTO/SB/56)

(Submit an original, and a duplicate for fee processing)



Applicant claims small entity status. See 37 CFR 1.9 and 1.27.



Specification and Claims (amended, if appropriate)



Drawing(s) (proposed amendments, if appropriate)

Reissue Oath/Declaration (original or copy)  
(37 C.F.R. § 1.175) (PTO/SB/51 or 52)

Original U.S. Patent

Offer to Surrender Original Patent (37 C.F.R. § 1.178)  
(PTO/SB/53 or PTO/SB/54)

or



Ribboned Original Patent Grant



Statement of Loss (PTO/SB/55)

Original U.S. Patent currently assigned?

Yes ☒ No

(If Yes, check applicable box(es))



Written Consent of all Assignees (PTO/SB/53 or 54)

37 C.F.R. § 3.73(b) Statement ☒ Power of Attorney

## ACCOMPANYING APPLICATION PARTS

8

☐ Foreign Priority Claim (35 U.S.C. 119)  
(if applicable)

9.

☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations

10.

☐ English Translation of Reissue Oath/Declaration  
(if applicable)

11.

☒ Preliminary Amendment

12.

☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)

13.

☒ Other: Check in the amount  
of \$345

## 14. CORRESPONDENCE ADDRESS



Customer Number or Bar Code Label



Correspondence address below

Name

Donald W. Margolis

Margolis &amp; Associates

Address

3405 Penrose Pl. Ste. 105

City

Boulder,

State

CO

Zip Code

80301

Country

USA

Telephone

303-443-6200

Fax

303-443-3818

NAME

(Print/Type)

Donald W. Margolis

Registration No. (Attorney/Agent)

22,045

Signature

Date

September 8, 2000

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR**

Docket Number (Optional)  
P4380

Applicant or Patentee: Ronald-G. Haagenstad

\*>Application< or Patent No.: Filed Herewith

Filed or Issued: Herewith

Title: Tiered Trenching Backhoe System

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.  
☐ the application identified above.  
☐ the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern; or organization exists.  
☐ Each such person, concern or organization is listed below.

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Ronald G. Haagenstad

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

Signature of inventor

Ronald G. Haagenstad

Date Sept 8, 2000  
September 8, 2000

Signature of inventor

Date

Signature of inventor

Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket: P4380

In re the Application of:

**RONALD G. HAAGENSTAD**

Serial No.: **Filed Herewith**

Filed: **Herewith**

For: **TIERED TRENCHING BACKHOE SYSTEM**

**PRELIMINARY AMENDMENT**

Assistant Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Dear Sir:

Please add new claims 7 and 8 to the present reissue application:

7. A tiered trenching system having a bucket for trenching, comprising:

said trenching bucket having leading end edge and a trailing end edge, said edges being  
spaced from one another and oriented substantially parallel to one another;

lateral side edges extending between said leading and said trailing end edges;

first tooth mounting means secured to said leading end edge of said trenching bucket and  
oriented in a direction substantially orthogonal to said first end edge; and

second tooth mounting means secured to said first leading end edge and also oriented to  
said leading edge in an orientation substantially parallel to said first tooth mount, but spaced  
from said first tooth mount.

8. The tiered trenching system of claim 7, wherein means for coupling removably attach a  
pair of replaceable teeth to each of said first and second tooth mounts.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Attorney Docket: **P4380**

In re the Application of:

**RONALD G. HAAGENSTAD**

Serial No.: **Filed Herewith**

Filed: **Herewith**

For: **TIERED TRENCHING BACKHOE SYSTEM**

**PRELIMINARY COMMENTS**

Assistant Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Dear Sir:

As a preliminary comment in support of the presently submitted reissue patent application, please consider the following:

Applicant is a victim of Invention Submission Corporation (ISC). He contracted with ISC and was represented in the preparation and prosecution of the original application by attorneys selected by ISC. As a result, Independent claim 1 of issued U.S. Patent 5,802,748, while precisely describing the best mode of the invention at the time that it was filed was more detailed than was required to describe the generic concept. Now, a new claim 7 provides such generic claim of the invention. New claim 7 meets the requirements of 35 U.S.C. §112, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs by "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

..Claim 7 sets forth the elements of the apparatus in a more generic format. In support of new claim 7, the device as it is being used in its commercial embodiment is shown in some detail in ATTACHMENT A.

It is urged that it be found in the review of the reissue application and of the prior art already present in the allowed application, that they would lead a person skilled in the art to which this invention pertains to the conclusion that the heart of the invention resides in the

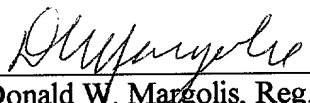
Provision of two spaced apart teeth carried at the front edge of a trenching bucket, which allow the bucket to simultaneously dig a pair of spaced apart tiered troughs.

With that structure present and positively claimed in new claim 7, the presence of means for carrying two spaced apart teeth, it is clear that many of the additional limitations of claims 1-6 are not critical. In addition, claim 7 is easily within the generic skill of an artisan in the relevant field, and does not constitute new matter. By contrast, the limitations in original claim 1 of a "trenching plate", a "transverse bend", and "first and second plate portions" do nothing more than define a state of the art bucket. Similarly, the "planar side member" are not critical to the operation of the trenching bucket.

For the foregoing reasons, review, evaluation and allowance of the attached reissue application is requested, including new claims 7 and 8, in order to provide adequate claims and undo the iniquity of ISC.

Please contact undersigned with any questions or comments.

Respectfully submitted,

  
Donald W. Margolis, Reg. No. 22,045  
3405 Penrose Place, Suite 105  
Boulder Co 80301  
303-443-6200

Enclosures  
DWM:gy

**EXPRESS MAIL CERTIFICATE**

**Label No. EL555938127US**

I hereby certify that this correspondence and fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope with the proper postage attached on the date indicated below and addressed to: Box New Reissue Patent Application, Assistant Commissioner of Patent & Trademarks, Washington, DC 20231.

  
DONALD W. MARGOLIS, Reg. No. 22,045

**September 8, 2000**  
**Date**

5,802,748

1

**TIERED TRENCHING BACKHOE SYSTEM****BACKGROUND OF THE INVENTION****1. Field of the Invention**

The present invention relates to Trenching Devices and more particularly pertains to a new Tiered Trenching Backhoe System for creating a dual tiered trench which allows one service utility to be elevated above another service utility thereby preventing contact of the two service utilities resulting in increased safety.

**2. Description of the Prior Art**

The use of Trenching Devices is known in the prior art. More specifically, Trenching Devices heretofore devised and utilized are known to consist basically of familiar, expected and obvious structural configurations, notwithstanding the myriad of designs encompassed by the crowded prior art which have been developed for the fulfillment of countless objectives and requirements.

Known prior art Trenching Devices include U.S. Pat. No. 5,212,897; U.S. Pat. No. 4,704,811; U.S. Pat. No. 5,197,212; U.S. Pat. No. 4,718,182; U.S. Pat. No. 4,360,980 and U.S. Design Pat. No. 264,213.

While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not disclose a new Tiered Trenching Backhoe System. The inventive device includes a syncline plate with an interior angle of approximately 140 degrees, a first and second triangular coupler welded at one end to the syncline plate removably coupling to a pair of existing tooth shanks of a backhoe bucket, a first and second fluke welded to the syncline plate opposite of the triangular couplers, a first and second trihedral support members welded to the interior portion of syncline plate providing support, and a pair of replaceable teeth removably secured to the first and second flukes.

In these respects, the Tiered Trenching Backhoe System according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides an apparatus primarily developed for the purpose of creating a dual tiered trench which allows one service utility to be elevated above another service utility thereby preventing contact of the two service utilities resulting in increased safety.

**SUMMARY OF THE INVENTION**

In view of the foregoing disadvantages inherent in the known types of Trenching Devices now present in the prior art, the present invention provides a new Tiered Trenching Backhoe System construction wherein the same can be utilized for creating a dual tiered trench which allows one service utility to be elevated above another service utility thereby preventing contact of the two service utilities resulting in increased safety.

The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new Tiered Trenching Backhoe System apparatus and method which has many of the advantages of the Trenching Devices mentioned heretofore and many novel features that result in a new Tiered Trenching Backhoe System which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art Trenching Devices, either alone or in any combination thereof.

To attain this, the present invention generally comprises a syncline plate with an interior angle of approximately 140 degrees, a first and second triangular coupler welded at one

2

end to the syncline plate removably coupling to a pair of existing tooth shanks of a backhoe bucket, a first and second fluke welded to the syncline plate opposite of the triangular couplers, a first and second trihedral support members welded to the interior portion of syncline plate providing support, and a pair of replaceable teeth removably secured to the first and second flukes.

There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

It is therefore an object of the present invention to provide a new Tiered Trenching Backhoe System apparatus and method which has many of the advantages of the Trenching Devices mentioned heretofore and many novel features that result in a new Tiered Trenching Backhoe System which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art Trenching Devices, either alone or in any combination thereof.

It is another object of the present invention to provide a new Tiered Trenching Backhoe System which may be easily and efficiently manufactured and marketed.

It is a further object of the present invention to provide a new Tiered Trenching Backhoe System which is of a durable and reliable construction.

An even further object of the present invention is to provide a new Tiered Trenching Backhoe System which is susceptible of a low cost of manufacture with regard to both materials and labor, and which accordingly is then susceptible of low prices of sale to the consuming public, thereby making such Tiered Trenching Backhoe System economically available to the buying public.

Still yet another object of the present invention is to provide a new Tiered Trenching Backhoe System which provides in the apparatuses and methods of the prior art



some of the advantages thereof, while simultaneously overcoming some of the disadvantages normally associated therewith.

Still another object of the present invention is to provide a new Tiered Trenching Backhoe System for creating a dual tiered trench which allows one service utility to be elevated above another service utility thereby preventing contact of the two service utilities resulting in increased safety.

Yet another object of the present invention is to provide a new Tiered Trenching Backhoe System which includes a syncline plate with an interior angle of approximately 140 degrees, a first and second triangular coupler welded at one end to the syncline plate removably coupling to a pair of existing tooth shanks of a backhoe bucket, a first and second fluke welded to the syncline plate opposite of the triangular couplers, a first and second trihedral support members welded to the interior portion of syncline plate providing support, and a pair of replaceable teeth removably secured to the first and second flukes.

Still yet another object of the present invention is to provide a new Tiered Trenching Backhoe System that can be utilized to step trench.

Even still another object of the present invention is to provide a new Tiered Trenching Backhoe System that is easy to install and remove from a backhoe bucket.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

FIG. 1 is a rear view of a new Tiered Trenching Backhoe System according to the present invention.

FIG. 2 is a side view thereof.

FIG. 3 is a magnified rear view of the present invention.

FIG. 4 is a cross sectional view taken along line 4-4 of FIG. 3.

FIG. 5 is an exploded isometric view of the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the drawings, and in particular to FIGS. 1 through 5 thereof, a new Tiered Trenching Backhoe System embodying the principles and concepts of the present invention and generally designated by the reference numeral 10 will be described.

More specifically, it will be noted that the Tiered Trenching Backhoe System 10 comprises a syncline plate 20, a first fluke 30 secured at one end of the syncline plate 20 projecting orthogonal to the central bend within the syncline plate 20, a second fluke 40 secured at the end securing the first fluke 30 and projecting parallel to the first fluke 30, a first trihedral support member 50 secured to an elongated

edge of the syncline plate 20 projecting orthogonal to the cornice of the syncline plate 20, a second trihedral support member 52 secured to the elongated edge of the syncline plate 20 opposite of the first trihedral support member 50, projecting parallel to said first trihedral support member 50, and a planar side member 60 secured to the side of the syncline plate 20 securing the second trihedral support member 52 and opposite of the first and second flukes 30, 40 projecting parallel to the syncline plate 20, where said planar side member 60 near the center includes a downward bend.

As best illustrated in FIGS. 1 through 5, it can be shown that the syncline plate 20 includes a first triangular coupler 22 secured to the end opposite of the first and second flukes 30, 40, and projecting parallel to said flukes 30, 40. A second triangular coupler 24 is secured to the end securing the first triangular coupler 22, and projecting parallel to the first triangular coupler 22. Said first and second triangular couplers 22, 24 removably attach to a pair of existing tooth shanks 14 secured to a backhoe bucket 12 thereby removably attaching the present invention. A pair of replaceable teeth 70 removably attach to the first and second flukes 30, 40 by a pair of teeth coupling pins 72 projecting through as best shown in FIG. 5 of the drawings. The syncline plate 20 preferably has an interior angle of approximately 140 degrees. All of the components are preferably welded together by continuous welds. The first and second triangular couplers 22, 24 either connect to the two rightmost existing tooth shanks 14, the two centermost existing tooth shanks 14, or the two leftmost existing tooth shanks 14 leaving a tier within the trench as shown in FIG. 1 of the drawings. The present invention also includes another mirrored invention which can be secured opposite of the first invention as disclosed in FIG. 1 of the drawings.

As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as being new and desired to be protected by Letters Patent of the United States is as follows:

1. A Tiered Trenching Backhoe System comprising:

a trenching plate having a transverse bend therein located between substantially planar first and second plate portions of said trenching plate, said trenching plate having first and second end edges oriented substantially parallel to said transverse bend and having lateral side edges extending between said end edges;

a first tooth mount secured to said first end edge of the trenching plate and projecting in a direction substantially orthogonal to said first end edge;

a second tooth mount secured to said first end edge and projecting from said first end edge in an orientation substantially parallel to the first tooth mount;

5

a first support member secured to one of the lateral edges of the trenching plate, said support member projecting in a direction substantially orthogonal to the second end edge of the trenching plate;

a second support member secured to the opposed lateral edge of the trenching plate, said support member projecting in a direction substantially parallel to said first support member; and

a planar side member secured to the lateral side edge of the trenching plate adjacent to the second support member and projecting substantially parallel to a plate portion of said trenching plate.

wherein said planar side member includes a downward bend therein at a location spaced from said lateral side edge.

2. The Tiered Trenching Backhoe System of claim 1, wherein the trenching plate includes:

a first triangular coupler secured to the second end edge of said trenching plate and projecting substantially parallel to said tooth mounts;

a second triangular coupler secured to the second end edge of said trenching plate and projecting substantially parallel to the first triangular coupler;

said first and second triangular couplers being removably attachable to a pair of existing tooth shanks secured to a backhoe bucket.

3. The Tiered Trenching Backhoe System of claim 1 additionally comprising a pair of replaceable teeth, each said replaceable tooth being removably attachable to a tooth mount by a pair of teeth tooth coupling pin.

4. The Tiered Trenching Backhoe System of claim 1 wherein the plate portions of said trenching plate define an interior angle therebetween of approximately 140 degrees.

6

5. A The Tiered Trenching Backhoe System of claim 2 wherein the first and second triangular couplers are adapted to connect to the two rightmost existing tooth shanks, the two centermost existing tooth shanks, or the two leftmost existing tooth shanks of a backhoe bucket for forming at least two tiers within a trench dug by said backhoe bucket.

6. The Tiered Trenching Backhoe System of claim 1 additionally comprising a second trenching plate having a transverse bend therein located between substantially planar first and second plate portions of said trenching plate, said trenching plate having first and second end edges oriented substantially parallel to said transverse bend and having lateral side edges extending between said end edges;

a first tooth mount secured to said first end edge of the trenching plate and projecting in a direction substantially orthogonal to said first end edge;

a second tooth mount secured to said first end edge and projecting from said first end edge in an orientation substantially parallel to the first tooth mount;

a first support member secured to one of the lateral edges of the trenching plate, said support member projecting in a direction substantially orthogonal to the second end edge of the trenching plate;

a second support member secured to the opposed lateral edge of the trenching plate, said support member projecting in a direction substantially parallel to said first support member; and

a planar side member secured to the lateral side edge of the trenching plate adjacent to the second support member and projecting substantially parallel to a plate portion of said trenching plate.

\* \* \* \* \*



US005802748A

**United States Patent** [19]  
**Haagenstad**

[11] **Patent Number:** **5,802,748**  
[45] **Date of Patent:** **Sep. 8, 1998**

[54] **TIERED TRENCHING BACKHOE SYSTEM**

[76] **Inventor:** **Ronald G. Haagenstad**, 119 Summer  
Heaven Dr., Blackhawk, Colo.  
80403-9032

4,038,766 8/1977 Felstet ..... 37/403 X  
4,085,530 4/1978 Laundry ..... 37/403 X  
4,360,980 11/1982 Jarvis ..... 37/404  
4,550,512 11/1985 Felstet ..... 37/403  
4,704,811 11/1987 Jefferson ..... 37/364  
5,212,897 5/1993 Jefferson ..... 37/403

[21] **Appl. No.:** **679,851**

[22] **Filed:** **Jul. 15, 1996**

[51] **Int. Cl.<sup>6</sup>** ..... **E02F 3/96**

[52] **U.S. Cl.** ..... **37/405, 37/403, 37/903;**  
414/724

[58] **Field of Search** ..... 37/403 404, 405,  
37/407, 903, 172/609, 414/724

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

2,838,856 6/1958 Buisse ..... 37/404  
2,864,184 12/1958 Fohr ..... 37/404  
2,896,343 7/1959 Raby ..... 37/407  
3,181,256 5/1965 Discenza ..... 37/404  
3,307,277 3/1967 Kondracki ..... 414/724 X  
3,478,449 11/1969 Baker ..... 37/403  
3,942,271 3/1976 George ..... 37/404  
4,009,529 3/1977 Johnson ..... 37/404

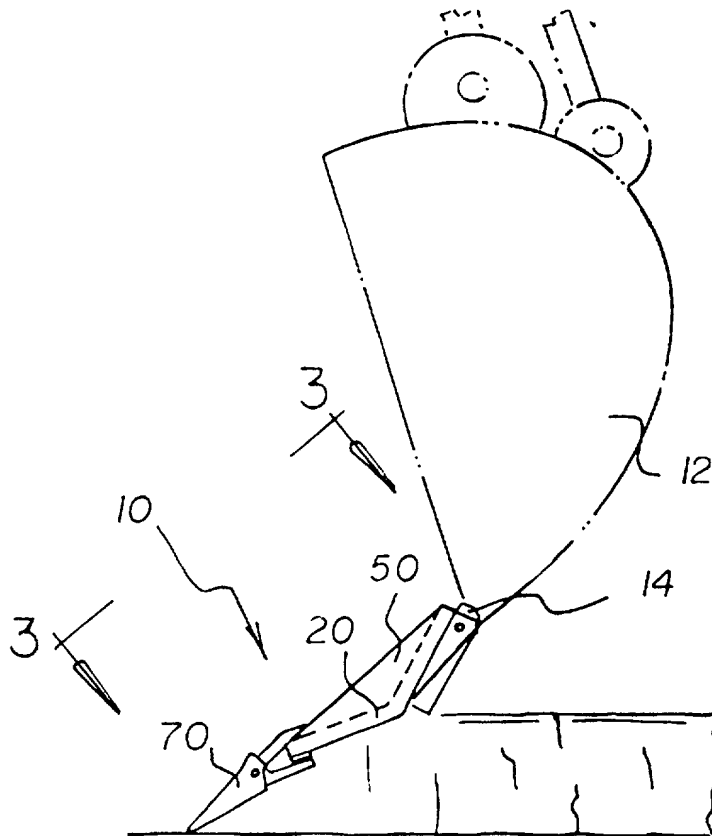
**Primary Examiner**—Terry Lee Melius

**Assistant Examiner**—Thomas A. Beach

[57] **ABSTRACT**

A new Tiered Trenching Backhoe System for creating a dual tiered trench which allows one service utility to be elevated above another service utility thereby preventing contact of the two service utilities resulting in increased safety. The inventive device includes a syncline plate with an interior angle of approximately 140 degrees, a first and second triangular coupler welded at one end to the syncline plate removably coupling to a pair of existing tooth shanks of a backhoe bucket, a first and second fluke welded to the syncline plate opposite of the triangular couplers, a first and second trihedral support members welded to the interior portion of syncline plate providing support, and a pair of replaceable teeth removably secured to the first and second flukes.

**6 Claims, 3 Drawing Sheets**



008060 286595

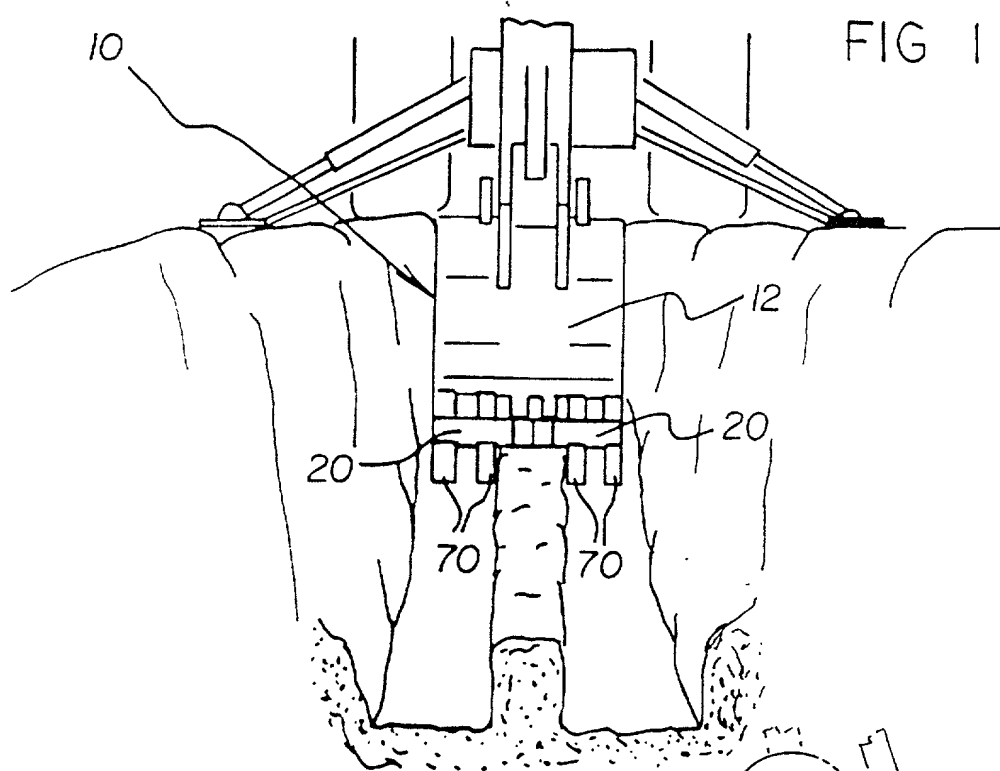
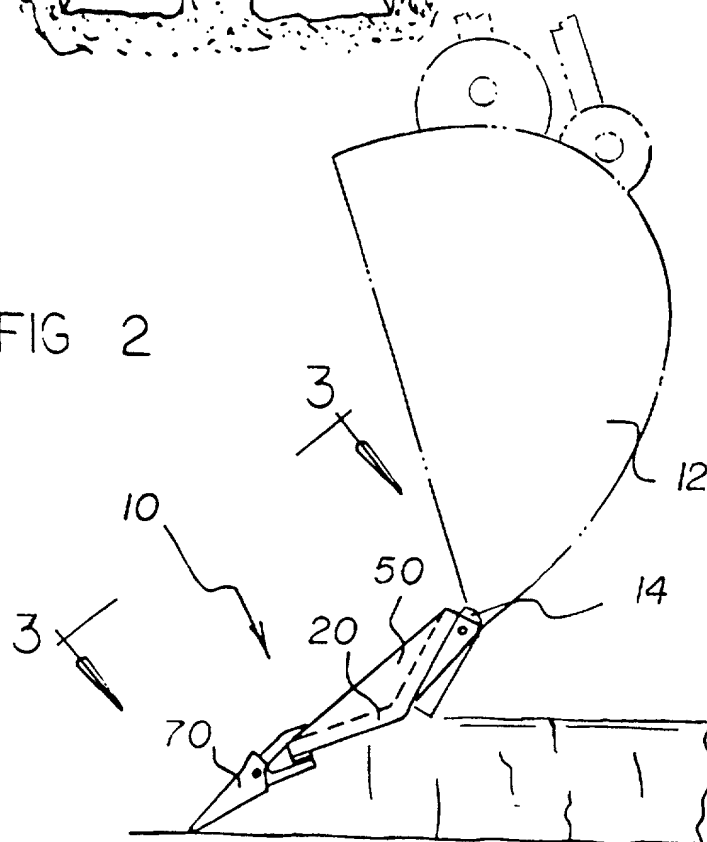


FIG 1

FIG 2



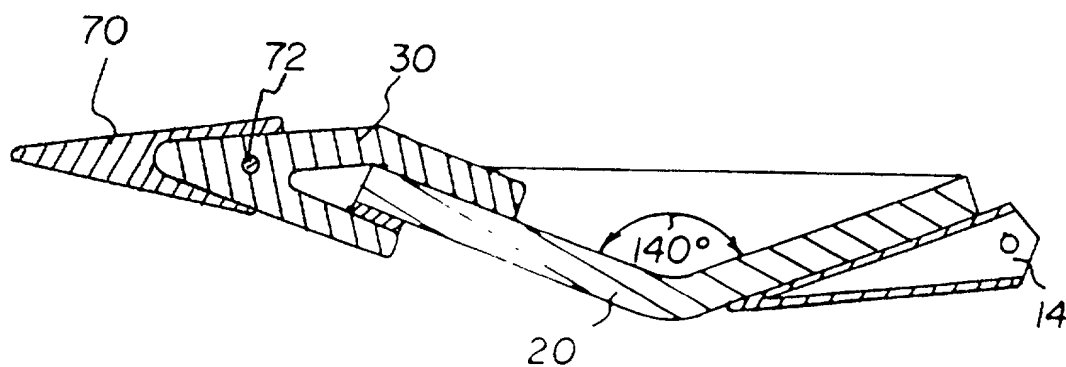
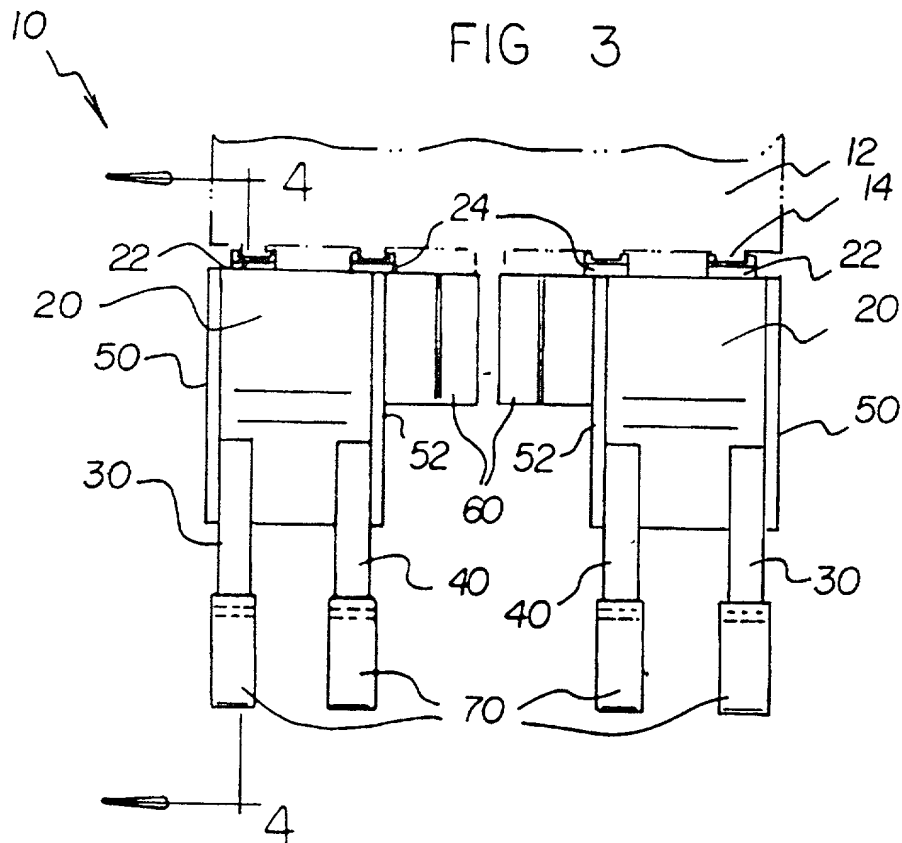


FIG 4

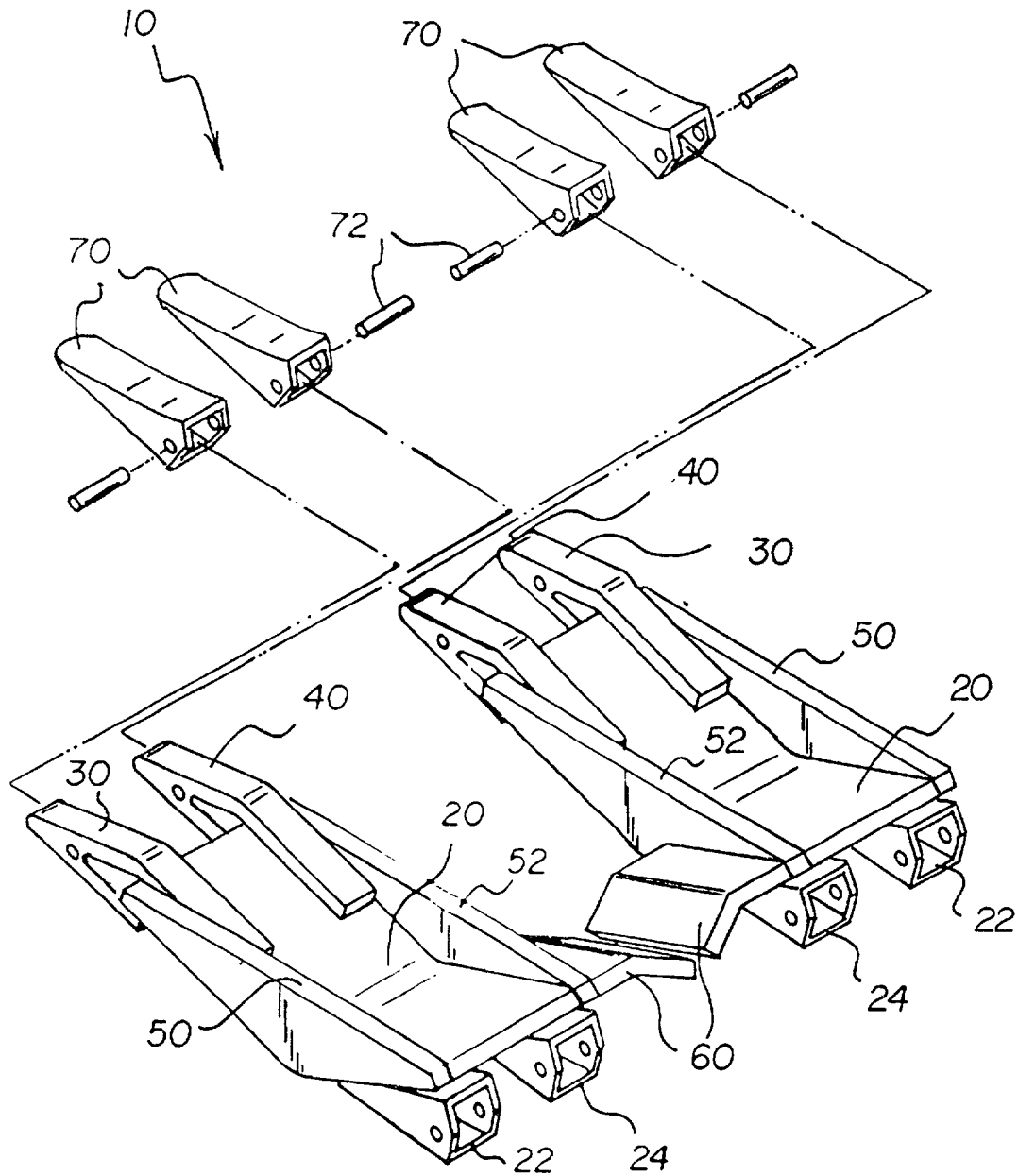


FIG 5

## Attorney Docket: P4380

**RONALD G. HAAGENSTAD**

For: **TIERED TRENCHING BACKHOE SYSTEM**

Assistant Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

As the inventor and owner of U.S. Patent 5,682,840, I hereby declare that I offer to surrender and return the original patent to the U.S. Patent and Trademark Office as part of the attached reissue application.

I hereby declare that all Statements made herein of my own knowledge are true and that all statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Ronald G. Haagenstad 09-08-00  
RONALD G. HAAGENSTAD

DWM:sfm

[illegible]

**As the below named inventor I hereby declare that:**

I verily believe that I am the original, first, and sole inventor of the invention entitled: **TIERED TRENCHING BACKHOE SYSTEM**, which is described and claimed in the specification **filed** as a reissue application herewith;

I do not know and do not believe that the invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof;

Said invention has been patented and made the subject matter of **United States Patent 5,802,748** on an application filed in my name by me;

I hereby declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

**RONALD G. HAAGENSTAD**  
**119 Summer Heaven Drive.**  
**Blackhawk, Colorado 80402-9032**

**September 8, 2000**



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re applicant: **RONALD G. HAAGENSTAD**

Serial No.: **Filed Herewith**

Filed: **Herewith**

For: **TIERED TRENCHING BACKHOE SYSTEM**

Assistant Commissioner of Patents  
Washington, DC 20231

**POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND  
REVOCATION OF PRIOR POWERS**

As Assignee of record of the entire interest of the above identified application,

**REVOCATION OF PRIOR POWERS OF ATTORNEY**

All powers of attorney previously given are hereby revoked, and

**NEW POWER OF ATTORNEY**

the following attorney(s) and/or agent(s) are hereby appointed to prosecute and transact all business in the Patent and Trademark Office connected herewith:

**DONALD W. MARGOLIS**  
**EMERY L. TRACY**

REG. NO. 22,045  
REG. NO 34,081

SEND CORRESPONDENCE TO:

**Donald W. Margolis**  
**Margolis & Associates**  
**3405 Penrose Place, Suite 105**  
**Boulder, CO 80301-1819**

DIRECT TELEPHONE CALLS TO:

**Donald W. Margolis**  
**(303) 443-6200**  
**Facsimile: (303) 443-3818**  
**E-mail: [margolislaw@rmi.net](mailto:margolislaw@rmi.net)**

  
**RONALD G. HAAGENSTAD**

**September 8, 2000**  
Date